

## REMARKS

Claims 1-17 remain pending in this application. Claims 1, 9, 12 and 17 are amended for clarity. The specification is amended by substitute specification, with a marked-up and a clean copy attached hereto, pursuant 37 C.F.R. § 1.125. Certain drawings are amended to correct typographical errors and for agreement with the description of the drawings, as found in the specification.

No new matter is added to the claims, the specification or the drawings with these amendments. The following paragraphs address all of the Examiner's points, objections and rejections, in that numbered headings correspond to the numbered points laid out in the Office Action mailed 05 December 2003.

### 2. Information Disclosure Statement

Pursuant 35 U.S.C. § 1.56 and 37 C.F.R. §§ 1.97(c) and 1.98, Applicant submits herewith an Information Disclosure Statement, form 1449A/PTO (modified), and copies of the references cited therein.

### 3. Specification

The Examiner objects to the specification for the following reason: "The specification has been checked to the extent necessary to determine the presence of possible minor error. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification". Per the Examiner's request, Applicant has reviewed the specification, and has made amendments to correct minor errors found therein. A substitute specification is enclosed herewith, in both marked-up and clean versions.

### 4. Claim Rejections – 35 USC § 112

Claim 17 stands rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner first notes that claim 17 erroneously included the phrase "the method comprising the steps of", before listing a single step. Claim 17 is amended to recite four steps, thus, "comprising the steps of" is proper. The additional steps also address the Examiner's requirement for a step for "modulates control and generate waveform". Amended claim 17 is supported by the specification, for example, from the paragraph beginning at line 1 of page 4, through the paragraph ending at line 3 of page 6 page of the specification as filed (*paragraphs [0009] to [0014] of the substitute specification*). Applicants believe that the Examiner's 35 USC § 112 rejection of claim 17 has been fully addressed. Withdrawal of the rejection and allowance of claim 17 is therefore respectfully requested.

## 5. Claim Rejections – 35 USC § 102

Claims 1-7, 10-11 and 17 stand rejected under 35 USC § 102(e) as being anticipated by U.S. Patent No. 6,501,773 (“Volz”).

To anticipate a claim, Volz must teach every element of the claim and “the identical invention must be shown in as complete detail as contained in the ... claim.” MPEP 2131 citing *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987) and *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989). Differences exist between Applicant’s claimed elements and Volz such that Volz cannot be said to anticipate Applicant’s invention. More specifically, Volz does not teach every element of applicant’s claims 1-7, 10-11 and 17, as demonstrated herein below.

Claim 1: The Examiner states that Volz discloses an apparatus comprising a plurality of laser source channels each including a laser source card. Respectfully, Applicant disagrees. Volz teaches a laser array system including a plurality of lasers, a switching mechanism, a wavelength locking mechanism, and a laser parameter feedback control. *See Volz Abstract*. Volz does not teach of a modular optical source array including a plurality of individual laser source channels. Volz also fails to teach that the optical source array may be selectively configured as needed. For example, Volz does not disclose a laser source card having a laser source that generates laser output with adjustable modulation depth, as in amended claim 1. Volz makes no mention of a laser source card as used in the optical source array (*see paragraph 24 of substitute specification*), and therefore fails to anticipate claim 1 for at least these reasons. Applicant thus respectfully requests withdrawal of the rejection and allowance of claim 1.

Claim 2: Claim 2 depends from claim 1 and thus benefits from the like argument. Claim 2 further differs from Volz because Volz does not teach or suggest a number of rail lines connecting the modulation controller with each of the laser source cards.

The Examiner references Volz, col. 7, lines 31-36 in rejecting claim 2. This passage reads as follows: “While specific embodiments of the invention have been illustrated and described, other embodiments and variations are possible. For example, the laser array modules of specific embodiments as described above or other embodiments may be used in a telecommunication equipment or devices such as a line card.” Applicant does not believe that this passage is relevant to claim 2. In particular, a laser source card is not the same as a line card, which is a communications device. As described within the specification, “Output from the various waveform sources travels on dedicated lines or rails, such as line 522 for modulation 1, line 524 for modulation 2, line 526 for coherence, and 528 for TTL digital switching. Each of laser source cards 106A to 106C is connected to the lines 522-528,” *see page 19, lines 6-9 (1<sup>st</sup> through 4<sup>th</sup> lines of paragraph [0053] of the substitute specification)*. Volz does not teach or suggest such rail lines connecting one output to multiple inputs.

For at least the reasons laid out herein, Applicant respectfully requests withdrawal of the Examiner's rejection, and allowance of claim 2.

Claim 3: Claim 3 depends from claim 1, through claim 2, and thus benefits from arguments presented for both claims 1 and 2, above. Furthermore, since Volz does not teach of a rail system, Volz cannot teach a programmably controllable rail selection switch for use in switching between selected rail lines. Rather, Volz recites a "switching mechanism is configured to receive and sequentially select the first part of the collimated beam from the plurality of lasers." *See Volz Abstract*. Applicant's programmably controllable rail selection switch of claim 3 is a distinct limitation not disclosed by Volz; therefore, Volz does not anticipate claim 3. For at least these reasons, withdrawal of the rejection, and allowance of claim 3 is respectfully requested.

Claim 4: Claim 4 also depends from claim 1, through the chain of claims 3 and 2, thus benefiting from like arguments. For at least this reason, Applicant contends that claim 4 is not anticipated by Volz, and therefore requests withdrawal of the rejection, and allowance of claim 4.

Claim 5: Claim 5 depends from claim 1, through dependency with claims 3 and 2, thus benefiting from like arguments. Furthermore, claim 5 recites a programmably controllable coherence rail switch capable of selecting between the coherence control waveform output and a ground. Volz does not teach of selecting a ground. The Examiner appears to note as much in stating that Volz does not disclose "digital signals ground". *See page 7 of the Office Action mailed 5 December, 2003*. Volz recites a "switching mechanism is configured to receive and sequentially select the first part of the collimated beam from the plurality of lasers." *See Volz Abstract*. Selecting a first part of a collimated beam from a plurality of lasers is different from selecting between a coherence control waveform output and a ground. Volz does not allow selection of ground to disconnect from a coherence waveform. Applicant thus requests withdrawal of the Examiner's rejection and allowance of claim 5.

Claim 6: Claim 6 depends from claim 1, through dependency with 5, 3 and 2, and thus benefits from like arguments. Furthermore, claim 6 recites the further limitation of the programmably controllable rail selection switch in each laser source card being capable of selecting between the coherence rail system and the shared rail systems to provide drive input for the laser source. Again, Volz describes a switching mechanism capable of selecting a first part of a collimated beam from a plurality of lasers. *See Volz Abstract*. This is different from selecting between a coherence rail system and a shared rail system. See substitute specification, paragraph 53. Volz, furthermore, makes no mention of either a coherence rail system or a shared rail system.

For at least the reasons given herein, Applicant believes that claim 6 is not anticipated by Volz. Applicant respectfully requests withdrawal of the Examiner's rejection and allowance of claim 6.

Claim 7: Claim 7 depends from claim 1, through dependency with claims 3 and 2, and so benefits from like arguments. Claim 7 includes the additional limitation of a programmably controllable digital modulation switch capable of selecting between the coherence control waveform

output and a ground. As argued above, Volz does not teach or suggest a switch capable of selecting between a waveform output and a ground. *See arguments in support of claim 5, above.* Volz therefore fails to teach or suggest all elements of Applicant's claim 7. Applicant therefore respectfully requests withdrawal of the Examiner's rejection, and allowance of claim 7.

*Claim 10:* Claim 10 depends from claim 1, through dependency with claim 2, thus benefiting from arguments presented in support of claims 1 and 2, above. But, Volz also fails to teach or suggest producing at least two members of the group consisting of square waves, sawtooth waves and sine waves, on rail lines, as in claim 10. Applicant therefore respectfully requests withdrawal of the Examiner's rejection, and allowance of claim 7.

*Claim 11:* Claim 11 depends from claim 1 and thus benefits from like arguments. Furthermore, claim 11 teaches laser source cards containing a programmably configurable switch. As argued above, Volz does not teach or suggest a laser source card; therefore Volz can not teach a laser source card with a programmably configurable switch. For at least these reasons, Applicant believes that claim 11 is not anticipated by Volz. Withdrawal of the rejection and allowance of claim 11 is respectfully requested.

*Claim 17:* Amended claim 17 recites a method of modulating a source array in an optical source bank, comprising the following steps:

- using a waveform controller to generate a plurality of waveform outputs to a rail system;
- selecting one of the rails of the rail system at a laser source card of the optical source bank to accept one of the waveform outputs; and
- modulating a laser source of the laser source card with the accepted waveform output.

As laid out herein above, Volz does not teach or suggest a modular optical source bank with laser source cards; therefore, Volz cannot teach modulating a laser source of a laser source card. Volz further fails to teach or suggest rails or a rail system; therefore, Volz cannot teach selecting a rail of the rail system at a laser source card.

For at least these reasons, Applicant believes that claim 17 is not anticipated by Volz. Withdrawal of the rejection and allowance of claim 17 is therefore respectfully requested.

## **6. Rejections – 35 U.S.C. § 103**

Claims 8, 9 and 12-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Volz in view of U.S. Patent No. 6,446,867 ("Sanchez"). Applicant respectfully disagrees and traverses the rejection.

For the purpose of the following discussion, the Examiner is respectfully reminded that to substantiate a *prima facie* case of obviousness, the initial burden rests with the Examiner, who must fulfill three requirements. More specifically, to establish a *prima facie* case of obviousness, three basic criteria must be met:

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. MPEP § 2143, *In re vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)

Claims 8 and 9: Claim 8 depends from claim 1, thus benefiting from like arguments. In addition, claim 8 recites a source modulation system wherein each laser source card includes a second switch capable of selecting between the digital modulation rail system and ground. As noted by the Examiner, Volz does not teach or suggest digital signals or ground. Volz therefore also fails to teach a switch that is capable of selecting between a digital modulation rail system and ground. As laid out herein above, Volz additionally fails to teach or suggest a modular optical source array with laser source cards and a rail system.

Sanchez also fails to teach or suggest a modular optical source array with laser source cards, and further fails to teach or suggest a switch that is capable of selecting between a digital modulation rail system and ground. Rather, Sanchez teaches a test system switch 220 with a drive controller 230 operable to control the state of the test system switch via control line 224 and communicate signals to and from the test system switch via signal line 225. Sanchez states that control and signal lines 224, 225 may comprise a bus operable to communicate data, control, ground and/or power signals; however, Sanchez is silent as to the ability of his switch to select between a digital modulation rail system and ground. *See Sanchez, col. 6, lines 36-55.*

As demonstrated, Volz in view of Sanchez fails to teach or suggest all of the limitations of claim 8. For at least this reason, the combination fails to establish a *prima facie* case of obviousness.

Claim 9 depends from claim 8 and thus benefits from like arguments. For at least this reason, Volz in view of Sanchez fails to establish a *prima facie* case of obviousness because the combination does not teach or suggest all of the limitations of claim 9. Applicant therefore respectfully requests withdrawal of the rejection under 35 USC § 103(a), and allowance of both claims 8 and 9.

Claims 12-16: Claims 12-16 depend from claim 1, and thus inherit the limitations of claims 1 and any intervening claims. Volz in view of Sanchez therefore fails to teach or suggest all of the limitations of claims 12-16.

In light of the above arguments, Applicant contends that Volz over Sanchez does not substantiate a *prima facie* case of obviousness, at least because the references, alone or in combination, fail to teach or suggest all of the limitations of claims 8, 9 and 12-16. Withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 8, 9 and 12-16 is respectfully requested.

A Petition for a two-month Extension of Time is submitted herewith, along with authorization to charge the required extension fee of \$210 for a small entity to Deposit Account No. 12-0600. The period for response is thereby extended up to and including May 5, 2004. Applicant further submits authorization to charge the \$180 fee for an Information Disclosure Statement filed under 37 C.F.R. § 1.97(c) to Deposit Account 12-0600.

Applicant believes no additional fees are due; however, should any additional fees be deemed necessary in connection with this Amendment and Response, the Commissioner is hereby authorized to charge the aforementioned Deposit Account. Should any questions arise, the Examiner is encouraged to telephone the undersigned attorney.

Respectfully submitted,

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Date

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